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# BCPO

## Big Crow Program Office

*Summary*

- Large-scale NKC-135 test bed aircraft, which can refuel in flight and are world-wide deployable
- Fleet of ground mobile tactical vehicles and highway-worthy trucks, which utilize the same system architecture as the NKC-135 aircraft
- Flexible system architecture in hardware, software and electronics enabling fast configuration and reconfiguration from disparately different technical areas (i.e., electronic warfare, telemetry, electro-optics, radar, radar threat simulation, and information operations)
- Continuous radio frequency coverage enabling multiple technical applications and cost efficiencies
- Electro-optics coverage

**The Department of Defense's premier electromagnetic research, development, test and evaluation, training, information operations, and test bed capability.**

The Big Crow Program Office (BCPO) provides customers with full spectrum, joint, multi-function support for the testing of communications, sensors, Information Operations (IO), and related weapon systems in support of Office of the Secretary of Defense, the Services, National Aeronautics and Space Administration, National Reconnaissance Office and others. This support includes replicating IO and Electronic Warfare (EW) threat environments as well as providing telemetry recording, technology prototyping, proof-of-concept demonstrations, and IO/EW training.

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**Introduction**

The Big Crow Program Office (BCPO) was established in 1971 with a charter to provide Electronic Warfare (EW) environments for testing U.S. military radio frequency (RF) sensor, communication, and navigation systems. Over the years, the need to exercise more sophisticated systems has led to the development of an in-house capability that far exceeds Big Crow's original charter and to a customer base that extends beyond the military services.

Big Crow's mission and capabilities now span the electronic spectrum, encompassing EW, Telemetry (TM), radar, and Electro-Optical (EO) systems. Mobile and worldwide deployable, the BCPO offers a variety of unique capabilities to the nation's Research, Development, Test and Evaluation (RDT&E), training, and commercial communities. C-135 aircraft, a myriad of smaller, fixed- and rotary-wing platforms, ground platforms, advanced instrumentation, multi-spectral electronics, in-house configuration control and modification authorities, and unparalleled technical competency provide the BCPO with an overall technical capability that is significantly greater than the sum of it parts.

**Electronic Warfare**

BCPO is the nation's premier, large-scale EW program, providing full-spectrum, highly instrumented, EW services. The payload capacity of Big Crow's C-135 aircraft supports the simultaneous operation of Electronic Attack (EA)/Electronic Support (ES) systems. Each system provides a fully stabilized, dedicated antenna operated independently with respect to frequency coverage, modulation technique, pointing angle, and transmitted power level. Big Crow EA systems use both custom and commercial off-the-shelf modulators with arbitrary waveform capability to create complex modulations.

Big Crow EA systems can generate megawatts of Effective Isotropic Radiated Power (EIRP). The operation of multiple high EIRP EA systems—simultaneously coupled with the standoff range of the Big Crow aircraft—enables both system and system of systems tests in an integrated EA environment.

Being highly instrumented, Big Crow EW systems can provide time-correlated position, spectral elements, calibrated EIRP, targeting, received signal parameters, and received signal geo-location data. This data, collected using digital/analog recorders, and comprehensive reports generated in near-real time are provided to the customer in both electronic and hard copy format upon landing.

**Telemetry**

When mobility, range and reliability really matter, Big Crow provides customers with state-of-the-art airborne and/or ground-based TM capabilities that are among DoD's most advanced. Modern suites of mobile TM equipment, large aperture tracking antennas, extended mission durations, and custom-tailored software offer considerable planning and execution flexibility. TM capabilities include receive/retransmit of TM streams to ground stations, decommutation of TM streams for real-time display of system parameters, remote control/flight termination capability, and mass storage of raw TM data.

**Antenna Range**

Big Crow's Antenna Test Site (BCATS), located in a secure area on Kirtland AFB, NM, is a versatile facility for the characterization and evaluation of all types of antennas. Situated on an elevated platform transparent to RF energy, BCATS is especially suited to testing devices requiring 3-D measurements.

**Air Services**

Big Crow formalized its Air Services capability in response to continuing customer requests for small, special purpose aircraft to support RDT&E and training. For more than 30 years Big Crow facilitated the acquisition and modification of various types of aircraft in support of these missions and, in the process, gained extensive knowledge of aircraft uniquely suited for test and training (e.g., aircraft with hard-points, instrumented avionics, large prime power availability). Today Big Crow Air Services operates a wide variety of aircraft, such as instrumented corporate jets with EW pods, tactical fighters, lighter-than-air vehicles, and helicopters.

**Mobile Test Range**

With an ever increasingly crowded frequency spectrum, congested airspace and the development of complex military systems, the ability to deploy assets worldwide and operate in austere regions or "Blue Water" ocean environments is essential for modern test and training assets. Big Crow's in-flight-refueling capable, large-scale C-135 aircraft, with its extended mission duration capability and configured with a host of secure terrestrial and satellite communication command and control systems, instrumented radar, TM and EO systems, represent the premier, go-anywhere test range capability available in the U.S.

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